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RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

EXAMINER	
SINKANTARAKORN, PAWARIS	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/672,657
Filing Date: September 26, 2003
Appellant(s): BOER ET AL.

Kevin M. Mason
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed *August 20, 2010* appealing from the Office action mailed February 23, 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-10 and 18-23 are rejected and pending in the application.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5721733	Wang et al.	2-1998
20030026283	Currivan et al.	2-2003
6169759	Kanterakis et al.	1-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-23 are rejected under 35 U.S.C. 101 because the recitation of a processor in itself does not tie the process steps to a "particular" machine. In other words, the recitation of a processor does not limit the processor to a particular machine specifically programmed for executing the steps of the claimed method. Thus, claim 1 fails the first prong of the machine-or-transformation test because it is not tied to a particular machine or apparatus.

A claimed process is patent-eligible under § 101 if: (1) it is tied to a "particular" machine or apparatus, or (2) it transforms a particular article into a different state or thing.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (USPN 5,721,733) and Currivan et al. (US 2003/0026283) in view of Kanterakis et al. (USPN 6,169,759).

Regarding claim 1, Wang et al. disclose a first wireless communication device, comprising:

a controller capable of receiving an acknowledgement (ACK) message transmitted by a second wireless communication device in response to a message transmitted by the first wireless communication device (see column 5 lines 25-43), and

a collision detector that monitors a wireless medium for collisions of the acknowledgement message (see column 5 line 66 – column 6 line 8).

Wang et al. do not expressly disclose a collision detector that monitors for collisions based on an energy level, preamble detection, and payload detection.

However, the invention of Currivan et al. from the same or similar fields of endeavor disclose a collision detector that monitors for collisions based on a comparison of an energy level and an energy level threshold and preamble detection (see paragraphs 55-58 and 70-78, and Table 1, a collision is detected based on a SNR indication signal and a threshold signal and a preamble detection, where the SNR indication signal represents a ratio of signal energy level and noise energy level; for example, an in-phase collision is detected when the output signal 459 is low and the output signal 457 is high, where the output signal 459 is related to the SNR indication signal 438 and the output signal 457 is related to the power indication signal).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the collision detector that monitors for collisions based on an energy level and preamble detection as taught by Currivan et al. into the collision detecting apparatus of Wang et al.

The motivation for implementing a collision detector that monitors for collisions based on an energy level and preamble detection is that it enables accurate detection of collisions (see paragraph 58).

Wang et al. and Currivan et al. do not expressly disclose a collision detector that monitors for collisions based on payload detection. However, Kanterakis et al., from the same or similar fields of endeavor, disclose a collision detector that monitors for collisions based on payload detection (see column 6 lines 45-60 and column 9 lines 8-17, detecting collision based on the collision detection field, where the beginning of the data payload contains a collision detection field).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the collision detector that monitors for collisions based on payload detection as taught by Kanterakis et al. into the collision detecting apparatus of Wang et al. and Currivan et al.

The motivation for implementing the collision detector that monitors for collisions based on payload detection is that the collision detection field is used to relay information about the possibility of collision with other simultaneously transmitting remote stations (see column 9 lines 13-14), which allows the station to stop further transmission of data (see column 6 lines 56-60) to lower the bandwidth usage of the network.

Regarding claim 2, Wang et al. disclose all the subject matter of the claimed invention except the first communication device, wherein the collision detector evaluates the energy level and detects a collision based on the energy level and the preamble detection. However, the invention of Currivan et al. from the same or similar fields of endeavor disclose a collision detection module, wherein the module evaluates power indication signal (see paragraphs 70-78), and detects a collision based on the evaluated power indication signal and the preamble detection (see paragraphs 55-58 and 70-78, and Table 1).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the collision detection module, wherein the module evaluates power indication signal and detects a collision based on the evaluated power indication signal as taught by Currivan et al. into the collision detecting apparatus of Wang et al.

The motivation for implementing the collision detection module, wherein the module evaluates power indication signal and detects a collision based on the evaluated power indication signal and the preamble detection is that it enables accurate detection of collisions (see paragraph 58).

Regarding claim 3, Wang et al. and Currivan et al. do not expressly disclose a payload detector that detects for collisions based on the detected payload. However, Kanterakis et al., from the same or similar fields of endeavor, disclose a payload detector that detect for collisions based on the detected payload (see column 6 lines 45-60 and column 9 lines 8-17, detecting collision based on the collision detection field, where the beginning of the data payload contains a collision detection field).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the payload detector that detects for collisions based on the detected payload as taught by Kanterakis et al. into the collision detecting apparatus of Wang et al. and Currivan et al.

The motivation for implementing the payload detector that detects for collisions based on the detected payload is that the collision detection field is used to relay information about the possibility of collision with other simultaneously transmitting remote stations (see column 9 lines 13-14), which allows the station to stop further transmission of data (see column 6 lines 56-60) to lower the bandwidth usage of the network.

Regarding claim 4, Wang et al. do not expressly disclose a preamble detector that detects for collisions based on the detected preamble. However, the invention of

Currivan et al. from the same or similar fields of endeavor disclose a preamble detector that detects a collision based on the evaluated power indication signal and the preamble detection (see paragraphs 55-58).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the preamble detector that detects for collisions based on the detected preamble as taught by Currivan et al. into the collision detecting apparatus of Wang et al.

The motivation for implementing the preamble detector that detects for collisions based on the detected preamble is that it enables accurate detection of collisions (see paragraph 58).

Regarding claim 5, Wang et al. disclose the collision detector is activated after the medium access wireless communication device transmits data (see column 5 line 66 – column 6 line 8);

regarding claim 6, the collision detector does not detect a collision if an ACK message or data header is received (see column 5 line 66 – column 6 line 8);

regarding claim 8, the controller determines if the second wireless communication device correctly received the transmitted message by monitoring the wireless medium (see column 5 line 66 – column 6 line 8);

regarding claim 9, the controller determines that the second wireless communication device did not likely receive the message if a collision is detected (see column 5 line 66 – column 6 line 8);

regarding claim 10, the controller determines that the collision was a cause of not receiving the ACK message (see column 5 line 66 – column 6 line 8).

Regarding claim 7, Wang et al. disclose all the subject matter of the claimed invention except the first communication device, wherein the device is implemented in accordance with the IEEE 802.11 Standard. However, the invention of Currivan et al. from the same or similar fields of endeavor disclose an 802.11-standard device (see paragraph 130, OFDMA; The modulation scheme used in 802.11 is OFDM).

Thus, it would have been obvious to the person of ordinary skill in the art to utilize an 802.11-standard device as taught by Currivan et al. in the collision detecting apparatus of Wang et al.

The motivation for utilizing an 802.11-standard device in the collision detecting apparatus is that it provides a faster transmission rate and more reliable.

Regarding claim 18, Wang et al. disclose a method for detecting a collision in a wireless communication network, the method comprising the steps of:

monitoring the wireless communication network for an acknowledgement message received in response to transmitted data (see column 5 lines 25-43); and

monitoring the wireless communication network to detect a collision of the acknowledgement message (see column 5 line 66 – column 6 line 8).

Wang et al. do not expressly disclose a method for monitoring for a collision based on an energy level, preamble detection, and payload detection. However, the invention of Currivan et al. from the same or similar fields of endeavor disclose a

collision detector that monitors for collisions based on a comparison of an energy level and an energy level threshold and preamble detection (see paragraphs 55-58 and 70-78, and Table 1, a collision is detected based on a SNR indication signal and a threshold signal and a preamble detection, where the SNR indication signal represents a ratio of signal energy level and noise energy level; for example, an in-phase collision is detected when the output signal 459 is low and the output signal 457 is high, where the output signal 459 is related to the SNR indication signal 438 and the output signal 457 is related to the power indication signal).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the method for monitoring for a collision based on an energy level and preamble detection as taught by Currivan et al. into the collision detecting apparatus of Wang et al.

The motivation for implementing the method for monitoring for a collision based on an energy level and preamble detection is that it enables accurate detection of collisions (see paragraph 58).

Wang et al. and Currivan et al. do not expressly disclose a method for monitoring for a collision based on payload detection. However, Kanterakis et al., from the same or similar fields of endeavor, disclose a collision detector that monitors for collisions based on payload detection (see column 6 lines 45-60 and column 9 lines 8-17, detecting collision based on the collision detection field, where the beginning of the data payload contains a collision detection field).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the method for monitoring for a collision based on payload detection as taught by Kanterakis et al. into the collision detecting apparatus of Wang et al. and Currivan et al.

The motivation for implementing the method for monitoring for a collision based on payload detection is that the collision detection field is used to relay information about the possibility of collision with other simultaneously transmitting remote stations (see column 9 lines 13-14), which allows the station to stop further transmission of data (see column 6 lines 56-60) to lower the bandwidth usage of the network.

Regarding claim 19, Wang et al. and Currivan et al. do not expressly disclose a method for detecting a payload and the collision detection is further based on the detected payload. However, Kanterakis et al., from the same or similar fields of endeavor, disclose a payload detector that detect for collisions based on the detected payload (see column 6 lines 45-60 and column 9 lines 8-17, detecting collision based on the collision detection field, where the beginning of the data payload contains a collision detection field).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the method for detecting a payload and the collision detection is further based on the detected payload as taught by Kanterakis et al. into the collision detecting apparatus of Wang et al. and Currivan et al.

The motivation for implementing the method for detecting a payload and the collision detection is further based on the detected payload is that the collision detection

field is used to relay information about the possibility of collision with other simultaneously transmitting remote stations (see column 9 lines 13-14), which allows the station to stop further transmission of data (see column 6 lines 56-60) to lower the bandwidth usage of the network.

Regarding claim 20, Wang et al. do not expressly disclose a method for detecting a preamble and the collision detection is further based on the detected preamble. However, the invention of Currivan et al. from the same or similar fields of endeavor disclose a preamble detector that detects a collision based on the evaluated power indication signal and the preamble detection (see paragraphs 55-58).

Thus, it would have been obvious to the person of ordinary skill in the art to implement the method for detecting a preamble and the collision detection is further based on the detected preamble as taught by Currivan et al. into the collision detecting apparatus of Wang et al.

The motivation for implementing the method for detecting a preamble and the collision detection is further based on the detected preamble is that it enables accurate detection of collisions (see paragraph 58).

Regarding claim 21, Wang et al. disclose a method, wherein the monitoring steps are performed after the data is transmitted (see column 5 line 66 – column 6 line 8);

regarding claim 22, the monitoring for the acknowledgement message step does not detect a collision if an ACK message or data header is received (see column 5 line 66 – column 6 line 8).

Regarding claim 23, Wang et al. disclose all the subject matter of the claimed invention except the method is implemented in accordance with the IEEE 802.11 Standard. However, the invention of Currivan et al. from the same or similar fields of endeavor disclose an 802.11-standard device (see paragraph 130, OFDMA; The modulation scheme used in 802.11 is OFDM).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to utilize an 802.11-standard device as taught by Currivan et al. in the collision detecting apparatus of Wang et al.

The motivation for utilizing an 802.11-standard device in the collision detecting apparatus is that it provides a faster transmission rate and more reliable.

(10) Response to Argument

Regarding claims 18-23, Appellants argue that independent claim 18 requires wherein one or more of the steps are performed by a processor. Thus, claims 18-23 are statutory under 35 U.S.C. §101.

In response to Appellants' argument, the Examiner respectfully disagrees. The recitation of a processor in itself does not tie the process steps to a "particular" machine. In other words, the recitation of a processor does not limit the processor to a particular machine specifically programmed for executing the steps of the claimed method. Thus, claim 18 fails the first prong of the machine-or-transformation test because it is not tied to a particular machine or apparatus. A claimed process is patent-eligible under 35

U.S.C. §101 if: (1) it is tied to a "particular" machine or apparatus, or (2) it transforms a particular article into a different state or thing.

Regarding claims 1 and 18, Appellants argue that Currivan et al. do not disclose or suggest determining an energy level or monitoring the wireless communication network to detect a collision of the acknowledgement based on a comparison of an energy level and an energy level threshold. In other words, Appellants argue that a Signal-to-Noise Ratio (SNR) is a signal-to-noise ratio and is not a measured energy level.

In response to Appellants' argument, the Examiner respectfully disagrees. It is well known to one of ordinary skill in the art that SNR is a ratio of signal energy level to noise energy level. Currivan et al. disclose that a collision is detected based at least on a SNR indication signal 438 and a threshold signal 446 having a threshold value, where a comparator compares the two signals and generate an output signal 459 that indicates the result of the comparison (see paragraph 74). Currivan et al. disclose that SNR = S/N, where S represents the power of signal. It is well known to one of ordinary skill in the art that power is the rate at which the energy is converted, where the unit of power is watt, which is equal to joule per second. Furthermore, Currivan et al. disclose detecting a collision based on output signals 455, 457, and 459 (see Table 1), where output signal 459 is generated based on the SNR indication signal 438 and the threshold signal 446. The claims use the transitional phrase "comprising," which is open-ended and does not exclude additional, unrecited elements or method steps. Currivan et al. disclose detecting a collision based at least on signal power and noise

power of the SNR value, threshold value, and the output signal 457. Thus, Currivan et al. disclose detecting a collision based on a comparison of an energy level and an energy level threshold, where the signal energy level as part of the SNR indication signal corresponds to the measured energy level and the threshold signal 446 corresponds to the energy level threshold.

Regarding claims 1 and 18, Appellants argue that Currivan's teaching to utilize a SNR ratio teaches away from the present invention; thus, there is no reason to make the asserted combination/modification.

In response to Appellants' argument, the Examiner respectfully disagrees. Wang et al. disclose a technique for detecting an acknowledgement message collision on a channel. Currivan et al. disclose a system for detecting collisions in a shared communications medium. Currivan's teaching to utilize the SNR ratio provides accurate collision detection (see paragraphs 9 and 12). Thus, Currivan et al. do not teach away from Wang et al. and the motivation to combine Currivan et al. with Wang et al. is provided in the prior art Currivan et al. itself.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Pao Sinkantarakorn/

Examiner, Art Unit 2464

Conferees:

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2464

/Derrick W Ferris/

Supervisory Patent Examiner, Art Unit 2463